

# 2005 Annual Drinking Water Quality Report

Moore County Department of Public Utilities  
The Carolina Water System - PWSID No. 03-63-152  
May 8, 2006

We're pleased to provide you with this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide to you a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you this information.

## What EPA Wants You to Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline (800-426-4791)**.

## Is it safe to drink?

**YES!** We are pleased to report that our drinking water is safe, and meets federal and state requirements. EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

## When You Turn On Your Tap, Consider the Source

We purchase our water from the Town of Southern Pines, which is fully treated surface water from Drowning Creek. The interconnection is located on Cherokee Road in the Warrior Woods subdivision. For your information, we have included analysis conducted in 2005 by the Town of Southern Pines in our report.

## Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for Moore County Public Utilities – The Carolina was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area.). The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating
<a href="#">Drowning Creek</a>	<a href="#">Moderate</a>

The complete SWAP Assessment report for the Town of Southern Pines may be viewed on the Web at:

<http://www.deh.enr.state.nc.us/pws/swap>. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to

swap@ncmail.net. Please indicate your system name, PWSID, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-715-2633. It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the systems’ potential to become contaminated by PCS’s in the assessment area.

#### **Violations that Your Water System Received for the Report Year**

During 2005 or any compliance period that ended in 2005, we received no violations. However, Southern Pines received a monitoring violation for Alkalinity and Total Organic Carbon. They are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the month of December 2005, they did not complete the monthly required Alkalinity and Total Organic Carbon (TOC) test and therefore cannot be sure of the quality of our drinking water during that time. Total Organic Carbon analysis is an indicator of the treatment process and not an indication of water quality problems. Required monthly monitoring was in compliance for the period January 2005 through November 2005. In December 2005 samples were taken and shipped by private courier but did not successfully arrive within the allotted time resulting in this monitoring violation. Historically they have not experienced any difficulty meeting the water quality standards.

There is nothing you need to do at this time. They have implemented a better sampling and monitoring plan to ensure the required sampling is completed within the allotted time. We will continue monitoring your water very closely.

#### **What if I have any questions or would like to become more involved?**

If you have any questions about this report or concerning your water utility, please contact **Ben Vaughn at (910) 947 - 6315**. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first Monday of each month at 2:00 p.m., and the third Monday of each month at 6:00 p.m. in the Commissioners’ Meeting Room, Second floor - Historic Courthouse, Courthouse Circle, Carthage, North Carolina.

#### **Water Quality Data Table of Detected Contaminants**

We routinely monitor for over 121 substances in your drinking water according to Federal and State laws. The following tables list all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in these tables is from testing done **January 1<sup>st</sup> to December 31<sup>st</sup>, 2005**. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentration of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

##### Important Drinking Water Definitions:

**Action Level (AL)** -the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Maximum Contaminant Level** - “Maximum Allowed” (MCL) is the highest level of a substance that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water everyday at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

**Maximum Contaminant Level Goal** - The “Goal” (MCLG) is the level of a substance in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Residual Disinfection Level Goal** – The “Level” (MRDLG) of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Maximum Residual Disinfection Level** – The “Highest Level” (MRDL) of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Nephelometric Turbidity Unit (NTU)** - a nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Not-Applicable (N/A)** – Information not applicable/not required for that particular water system or for that particular Rule.

**Parts per million (ppm)** - one part per million corresponds to one minute in two years, or a single penny in \$10,000.

**Parts per billion (ppb)** - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

REGULATED CONTAMINANT TEST RESULTS						
Substance	Violation Y/N	Your Water	Units	MCLG	MCL	Likely Source of Contamination
<b>Turbidity – regulated at the Town of Southern Pines Water Plant – 2005</b>						
Turbidity	N	<u>0.23</u> 100 %	NTU	N/A	<u>TT = 0.3 NTU</u> TT = % of samples < 0.3 NTU	Soil runoff
<b>Inorganic Substances – regulated at the Town of Southern Pines Water Plant – 2005</b>						
Fluoride	N	1.20	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

**Copper & Lead – regulated at the user's tap**

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	2003	0.015	0	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90 <sup>th</sup> percentile)	2003	3	0	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits

**Disinfection By-Product Contaminants - 2005**

Contaminant (units)	MCL Violation Y/N	Your Water	Range  Low High		MCLG	MCL	Likely Source of Contamination
HAA5 (ppb) [Haloacetic Acids]	N	28	N/A		N/A	60	By-product of chlorination
TTHM (ppb) [Total Trihalomethanes]	N	54	N/A		N/A	80	By-product of chlorination
Chloramines (ppm)	N	1.08	0.24	1.63	MRDLG = 4	MRDL = 4	Water additive used to control microbes

**Disinfection By-Product Precursors Contaminants - tested at the Southern Pines Water Plant**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range  Low High		MCLG	MCL	Likely Source of Contamination
Total Organic Carbon (ppm) (TOCs)-RAW	2005	N	9.38	N/A		N/A	TT	Naturally present in the environment
Total Organic Carbon (ppm) (TOCs)-TREATED	2005	N	4.41	N/A		N/A	TT	Naturally present in the environment

Unregulated contaminant monitoring assists EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. **If you would like more information on unregulated chemicals, please call the EPA Hotline at 1-800-426-4791.**

Unregulated Inorganic Chemicals – tested at the Southern Pines Water Plant – 2005				
Contaminant (units)	Your Water	Range		Proposed MCL
		Low	High	
Sulfate (ppm)	9.0	N/A		500
Unregulated Volatile Organic Chemicals – tested at the Southern Pines Water Plant - 2005				
Contaminant (units)	Your Water	Range		Proposed MCL
		Low	High	
Bromodichloromethane (ppb)	3.1	<1.0	3.1	N/A
Chloroform (ppb)	34.4	10.6	34.4	N/A
Dichloroacetic Acid (ppb)	36.3	17.4	36.3	N/A
Monochloroacetic Acid (ppb)	3.3	2.1	3.3	N/A

Trichloroacetic Acid (ppb)	16	3.2	16	N/A
----------------------------	----	-----	----	-----

Secondary contaminants, required by the NC Public Water Supply Section, are substances that affect the taste, odor and/or color of drinking water. These aesthetic contaminants normally do not have any health effects and normally do not affect the safety of your water.

**Water Characteristics – regulated at the Southern Pines Water Plant – 2005**

Parameter (units)	Your Water Annual Avg.	Secondary MCL
Alkalinity (ppm)	14.5	N/A
Carbon Dioxide (ppm)	8.4	N/A
Chloride (ppm)	17	250
Color (color units)	4.7	15
Hardness (ppm)	28.5	N/A
Iron (ppm)	0.02	0.3
Manganese (ppm)	0.006	0.05
Orthophosphate (ppm)	0.58	N/A
pH (pH units)	7.4 – 8.7	6.5-8.5
Sodium (ppm)	2.04	N/A

**List of All Required Contaminants for Purchase Water Systems**

Testing requirements and frequencies are based on type of water used, size of population, purchase system versus non-purchase systems, detection of a contaminant, state-wide sampling waivers, previous sampling history--reduced monitoring permission, etc.

**Regulated Contaminants--have an allowable limit (Maximum Contaminant Level {MCL})**

Asbestos – certain systems – every 9 years

Microbiological--every month

Total Coliform                      Fecal/E. Coli--as needed

Lead and Copper--every 6 months or every year or every 3 years

Total Trihalomethanes--certain systems--every quarter or every year

Chloroform              Bromoform              Chlorodibromomethane              Bromodichloromethane  
(These 4 contaminants results added together equal the Total Trihalomethanes)

Total Haloacetic Acids--certain systems—every quarter or every year

Monochloroacetic Acid      Dichloroacetic Acid              Trichloroacetic Acid              Monobromoacetic Acid              Dibromoacetic Acid  
(These 5 contaminants results added together equal the Total Haloacetic Acids)

We, at Moore County Department of Public Utilities, work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future. **Please call our office at (910) 947-6315 if you are in need of customer service.**